

**AMENDMENT NO. 3 TO
PROFESSIONAL SERVICES AGREEMENT
FOR THE FRANKLIN WASTEWATER RECLAMATION FACILITY
COF Contract No. 2013-0001**

THIS AMENDMENT is made and entered into on this the ____ day of _____, 2016, by and between the **City of Franklin, Tennessee** ("City") and **CDM Smith** ("Consultant").

WITNESSETH:

WHEREAS, City and Consultant entered into a Professional Services Agreement entitled City of Franklin, Tennessee Professional Services Agreement, Wastewater Reclamation Facility Modifications and Expansion Project (COF Contract No. 2013-0001) ("Agreement"), dated March 3, 2013, at a fee not to exceed \$2,967,150.00; and

WHEREAS, the City and Consultant modified the Agreement as approved by Amendment No. 1 to the Agreement dated May 27, 2014, at a fee not to exceed \$2,293,000.00; and

WHEREAS, the City and Consultant modified the Agreement as approved by Amendment No. 2 to the Agreement dated November 10, 2015, at a fee not to exceed \$740,500.00; and

WHEREAS, during the final stages of the engineering (design) of the Project the Consultant and City staff determined that there is a need for a revision in the Scope of Services for the Agreement to add Task 1, Task 2, Task 3, Task 4, Task 5, and Task 6 as found in Exhibit A, Amendment 3 Proposal (attached and made a part hereto); and

WHEREAS, the additional Tasks for this Amendment as listed have multiple sub-parts which are described in Table 1 as found in Exhibit A; and

WHEREAS, the Consultant has presented to the City staff a summary of costs that breaks down the anticipated work effort for each Task (Table 2) as found in Exhibit A; and has been reviewed by City staff and appears to be appropriate for the work required for the completion of the Tasks; and

WHEREAS, City staff feels the Task Values as present in Table 2 of Exhibit A are appropriate for the anticipated work required for the Scope of Services revisions as presented in the Amendment of the Agreement.

NOW, THEREFORE, in consideration of these premises and the mutual promises contained herein, it is agreed by and between the parties as follows:

1. The foregoing recitals are incorporated by reference as if fully stated herein.

2. Consultant's Responsibilities and Duties. The Consultant shall perform the work as proposed in the Scope as found in **Exhibit A**. Exhibit A shall be considered as an integral part hereof.

3. City's Responsibilities and Duties. The City shall pay the Consultant in an amount not to exceed **Four Hundred Eighty-Four Thousand Two Hundred Thirty and No/100 Dollars (\$484,230.00)** for the additional Services as described in Exhibit A for Task 1, Task 2, Task 3, Task 4, Task 5 and Task 6.

4. Force Majeure. Neither party will be liable to the other for any delay or failure to perform any of the services or obligations set forth in the Agreement due to causes beyond its reasonable control, and performance times will be considered extended for a period of time equivalent to the time lost because of such delay plus a reasonable period of time to allow the parties to recommence performance of their respective obligations hereunder. Should a circumstance of Force Majeure last more than ninety (90) days, either party may by written notice to the other terminate this Agreement. The term "force majeure" as used herein shall mean the following, as further described below: acts of God; strikes, lockouts or other industrial disturbances; acts of public enemies; order or restraints of any kind of the government of the United States or of the State or and of their departments, agencies or officials, or any civil or military authority; insurrections, riots, landslides, earthquakes, fires, storms, tornadoes, droughts, floods, explosions, breakage or accident to machinery, transmission pipes or canals; or any other cause or event not reasonably within the control of either party. The parties agree to use The Old Farmer's Almanac, Nashville International Airport

(<http://www.almanac.com/weather/history/TN/Nashville/2016-07-18>)

to determine whether weather conditions constitutes a force majeure. If, on a particular date, thunder, tornadoes and fog are recorded, or if total precipitation exceeds one half inch, then it shall constitute a force majeure.

5. Equal Employment Opportunity. In connection with this Amendment and the project, City and Consultant shall not discriminate against any employee or applicant for employment because of race, color, sex, national origin, disability or marital status. City and Consultant will take affirmative action to ensure that Consultant is employed and that employees are treated during employment without regard to their race, age, religion, color, gender, national origin,

disability or marital status. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination, rates of pay or other forms of compensation; and selection for training, including apprenticeship. Consultant shall insert the foregoing provision in all contacts relating to this Amendment or project.

6. Title VI – Civil Rights Act of 1964. City and Consultant shall comply with all the requirements imposed by Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d), 49 C.F.R., Part 21, and related statutes and regulations. Consultant shall insert the foregoing provision in all contacts relating to this Amendment or project.

7. Conflicts of Interest. No amount shall be paid directly or indirectly to an employee or official of the State of Tennessee as wages, compensation, or gifts in exchange for acting as an office, agent, employee, subcontractor, or consultant to the Agency in connection with any work contemplated or performed relative to this Amendment/ Agreement. Consultant shall insert the foregoing provision in all contacts relating to this Amendment or project.

8. Notices. Any notice provided to the Amendment, if specified to be in writing, will be in writing and will be deemed given: (a) if by hand delivery, then upon receipt thereof; (b) if mailed, then three (3) days after deposit in the mail where send is located, postage prepaid, certified mail return receipt requested; (c) if by next day delivery service, ten upon such delivery; or (d) if by facsimile transmission or electronic mail, then upon confirmation of receipt. All notices will be addressed to the parties at the addresses set forth below (or set forth in such other document which the Amendment may accompany, or such other address or either party may in the future specify in writing to the other):

In the case of the City:
City of Franklin
Attn: Mark Hilty
124 Lumber Drive
Franklin, TN 37065
(615) 794-4554
Mark.hilty@franklinton.gov

In the case of Consultant
CDM Smith
Attn: Zack Daniel
Parkway Towers
210 25th Ave N, Ste 1102
Nashville, TN 37203
(615) 771-2466
DanielZA@cdmsmith.com

9. Waiver. Neither party's failure nor delay to exercise any of its rights or powers under this Amendment will constitute or be deemed a waiver or

forfeiture of those rights or powers. For a waiver of a right or power to be effective, it must be in writing signed by the waiving party. An effective waiver of a right or power shall not be construed as either (a) a future or continuing waiver of that same right or power, or (b) the waiver of any other right or power.

10. Severability. If any term or provision of the Amendment is held to be illegal or unenforceable, the validity or enforceability of the remainder of the Amendment will not be affected.

11. Precedence. In the event of conflict between this Amendment and the provisions of the previous Agreement(s), or any other contract, agreement or other document to which this Amendment may accompany or incorporate by reference, the provisions of this Amendment will, to the extent of such conflict (or to the extent the Agreement is silent), take precedence unless such document expressly states that it is amending this Amendment.

12. Entire Agreement. The Amendment between the parties supersedes any prior or contemporaneous communications, representations or agreements between the parties, whether oral or written, regarding the subject matter of the entire Amendment. The terms and conditions of this Amendment may not be changed except by an amendment expressly referencing this Amendment by section number and signed by an authorized representative of each party.

13. Additions/Modifications. If seeking any addition or modification to the Amendment, the parties agree to reference the specific paragraph number sought to be changed on any future document or purchase order issued in furtherance of the Amendment, however, an omission of the reference to same shall not affect its applicability. In no event shall either party be bound by any terms contained in any purchase order, acknowledgement, or other writings unless: (a) such purchase order, acknowledgement, or other writings specifically refer to the Amendment or to the specific clause they are intended to modify; (b) clearly indicate the intention of both parties to override and modify the Amendment; and (c) such purchase order, acknowledgement, or other writings are signed, with specific material clauses separately initialed, by authorized representatives of both parties.

14. Breach. Upon deliberate breach of the Amendment by either party, the non-breaching party shall be entitled to terminate the Amendment without notice, with all of the remedies it would have in the event of termination, and may also have such other remedies as it may be entitled to in law or in equity.

15. Survival. This Amendment shall survive the completion of or any termination of the original contract, revised contract, or agreement or other document to which it may accompany or incorporate by reference.

16. All other provisions of the Agreement dated March 4, 2013, Amendment No. 1 dated May 27, 2014, and Amendment No. 2 dated November 10, 2015, are unchanged and remain in full force and effect.

IN WITNESS WHEREOF, the parties have executed this Amendment.

CITY OF FRANKLIN, TENNESSEE

CDM Smith

By: _____

Dr. Ken Moore

Mayor

By: _____

Print Name _____

Title: _____

Attest:

Eric S. Stuckey

City Administrator

Approved as to form:

Kristen L. Corn Assistant City Attorney

Proposed Amendment 3

Franklin Wastewater Reclamation Facility

Modifications and Expansion Project

1.0 Project Background

The City of Franklin's (City) Wastewater Reclamation Facility (WRF) Modifications and Expansion Project design is nearing completion. Delays have occurred with regards to securing State Revolving Fund monies because approval of a loan is dependent upon obtaining a National Pollution Discharge Elimination System (NPDES) permit. The issuance of an NPDES permit is delayed because the Tennessee Department of Environment and Conservation desires settlement of the lawsuit between the Harpeth River Watershed Association and the City prior to issuing the permit. A number of the scope items below are related to these delays and associated additional efforts required to work through these funding and permitting issues for the City. In addition, several scope items are related to the anticipated requirements associated with the settlement of the lawsuit.

Another recent development surfaced due to public concerns with regards to existing and proposed odors associated with the WRF. Other scope items noted within are associated with addressing these odor concerns. Additionally, there are a few other scope items associated with changes that were required to finalize the design of the WRF that are also detailed below.

Because of the delays to the WRF project due to the lawsuit/permit/SRF loan issues, the City requested CDM Smith investigate the work associated with splitting the WRF design into two separate sets of contract documents to allow bidding and construction of the non-permit dependent portions of the WRF construction to proceed earlier.

2.0 Scope

Task 1, Odor Control Assistance

The City requested CDM Smith assistance in response to odor complaints regarding the existing water reclamation facility and concerns about odors at the proposed facility. This task consists of two subtasks: 1.1 Assistance with response to odor control issues, and 1.2 Establishing baseline odor conditions. Each of these are described in more detail below.

Task 1.1, Assistance with Public Response to Odor Control Issues

The homeowner's association for the neighborhood (Chestnut Bend Homeowners Association or CBHOA) abutting the treatment plant site hired the consultant, Webster Environmental Associates Inc. or WEA, to evaluate the potential for odor and noise issues associated with the proposed WRF improvements. WEA produced a report identifying several concerns. The City asked CDM Smith to assist with drafting a response to CBHOA and WEA. This task included the following subtasks:

- Public meeting assistance – CDM Smith reviewed the WEA report and researched the comments and questions posed in the report. CDM Smith then prepared a presentation that provided a summary of the proposed improvements, associated potential odor and noise sources, and design components designed to mitigate the associated potential odor

and noise sources. In addition, the presentation addressed each of the primary concerns identified in the WEA report. CDM Smith attended the public meeting with the City staff.

- Cursory evaluation of existing odor sources – A CDM Smith odor control specialist visited the site on February 4, 2016 to perform a cursory walk through and evaluation of potential odor sources.
- Subsequent to the public meeting, WEA provided comments on the presentation slides via the CBHOA. It is our understanding that it will not be necessary to prepare a response to the WEA comments.
- Technical memorandum - Following the above activities CDM Smith prepared a technical memorandum documenting the results and responding to the WEA report comments and questions. In addition, the document presented recommendations for additional actions. This document was submitted to the City in draft form on March 1, 2016. The document will be finalized upon receipt of City comments.

Task 1.2, Establishing Baseline Odor Conditions

The purpose of this task is to define baseline odor conditions for the Franklin WRF and the area immediately around the WRF to provide a benchmark that future conditions can be compared against as a means of judging progress. By “area immediately around the WRF” we are referring to the potential wastewater collection system “breathing” points in the areas adjacent to the treatment plant. The reason we propose including the adjacent wastewater collection system is that we sometimes find that odor issues originate from the adjacent collection system rather than (or as well as) the treatment plant itself. The goal is to differentiate the sources in our baseline characterization such that any future actions can be properly targeted and changes in conditions can be parsed out by area.

This task is broken down into four subtasks: Collection and review of existing data and information, Development of a sampling plan, Odor characterization and quantification (sampling), and Preparation of a baseline odor condition report. These subtasks are described below.

Task 1.2.1, Collection and Review of Existing Data and Information

This subtask includes collection of the historic data and information from the City, including previous air sampling data, odor complaint logs, plant meteorological data, relevant plant process data, relevant operation and maintenance logs, and operation and maintenance manuals for odor control equipment. CDM Smith may also request historic WRF and collection system drawings and specifications that we currently do not have in our files. CDM Smith will work with the City staff to identify and obtain this information. After review of this data and information, CDM Smith’s odor control specialist will hold a conference call with the appropriate treatment plant staff to verify our understanding of the data, information, current plant odor control systems, etc.

Task 1.2.2, Development of a Sampling Plan

CDM Smith will prepare a map showing the proposed sampling locations and a list of sampling parameters for each location and transmit it to the City by email. The map(s) will be existing drawings with dots marking the sampling spots. A conference call will then be held to discuss the

sampling locations, sampling parameters, sample quantities, sampling durations and other general details with the City to develop concurrence on the overall approach.

We will then prepare a draft sampling plan documenting the specific details of the sampling event. The draft plan will be reviewed by a senior odor control specialist and revised accordingly. The draft plan will then be transmitted to the City for review. A conference call will be held to discuss any comments and then the sampling plan will be finalized.

Task 1.2.3, Sampling (Odor Characterization and Quantification)

Prior to beginning sampling, the odor control specialist will meet with the plant personnel to go over the sampling plan and coordinate access requirements and required assistance. This meeting will include a tour of the plant to verify concurrence on exact sampling locations and details. We assume that the following sampling will be performed:

- Liquid Phase Measurements – These will include measurement of dissolved sulfide (measured with a LaMotte Kit), pH, oxidation reduction potential, and temperature. All measured onsite. BOD data will be obtained from Plant records. We assume that measurements will be taken at up to five locations in the treatment plant and up to eight in the collection system.
- Vapor Phase Measurements – The following vapor phase measurements will be taken:
 - Hydrogen Sulfide Logging – Hydrogen sulfide will be measured using hydrogen sulfide logging instruments (Odalogs) that will be placed at up to eight locations (some onsite and some offsite). The Odalogs will be allowed to remain in place for ten to fourteen days and then retrieved and downloaded.
 - Hydrogen Sulfide Discreet Samples – An Interscan Hydrogen Sulfide Analyzer and a Jerome Gold Film Hydrogen Sulfide Analyzer will be used to take discrete hydrogen sulfide measurements from potential fugitive emission sources and to quantify the strength of the odor samples taken for laboratory analysis.
 - Tedlar bag Samples – Up to 12 Tedlar bag samples will be collected and sent to St. Croix Sensory, Inc. for analysis in accordance with EN 13725:2003 “Air Quality – Determination of Odour Thresholds by Dynamic Dilution Olfactometry”
 - Air Flow Measurement - For each sample collected, measurements will be taken to allow the calculation of an emission rate from the sampled source.

We made the following assumptions for pricing of the odor sampling event:

- A CDM Smith odor control specialist will be onsite for two full days to meet and coordinate with plant staff, perform all liquid phase sampling, place all hydrogen sulfide logging instruments, and perform the discrete sampling. All sampling equipment will be supplied by CDM Smith.
- The hydrogen sulfide logging instruments will be left in place for ten to fourteen days and thus will be rented for fourteen days.

- A local CDM Smith staff member will retrieve and download data from the hydrogen sulfide logging instruments at the end of the established logging period.

After completion of non-data logging sampling, bag samples will be packed and shipped to the appropriate laboratories and sampling equipment and materials will be packed and shipped back to the equipment rental company or the CDM Smith office. After completion of data logging field sampling, data will be downloaded from the loggers and the loggers will be packed and returned to the rental company.

Task 1.2.4 Preparation of a Baseline Odor Condition Report

CDM Smith will prepare a draft Baseline Odor Condition Report plan which will then be technically reviewed by a senior operations and maintenance specialist and a senior biological process engineer. The plan will then be revised and sent in electronic form to the City for review. Subsequently, CDM Smith will hold a conference call with the City to discuss input and then finalize the report. Meeting notes will be provided, but no formal response to comments will be provided. Four hard copies of the final document will be provided to the City along with one electronic copy in pdf format.

Task 2, Added Technical Evaluations and Assistance

Certain evaluations were performed to assist with decision making for the design and operations of the proposed sludge management system. These are summarized below.

Task 2.1, Biological Process Modeling to Account for Change from Traditional Anaerobic Digestion to Thermal Hydrolysis

The design for the liquids treatment process was well underway when the alternatives analysis for selection of the biosolids management processes was completed. Moving the liquids design ahead was necessary to meet the contractual schedule. Up to that point it was assumed that the biosolids management would include anaerobic digestion, but not thermal hydrolysis. However, the selected alternative did include thermal hydrolysis. With the addition of thermal hydrolysis, the anticipated level of nutrients in the filtrate from the sludge dewatering processes increased and therefore the level of nutrients being returned to the head of the plant would be increased. As such, it was necessary to re-perform all of the biological process modeling.

Task 2.2, Evaluation of Staffing Levels for the New Sludge Management Facilities

The new sludge management facilities will require additional operations and maintenance staff, and in some cases will require types of skills that are not possessed by the current staff. To be proactive and to clearly define the implications of design decisions on operations, the City asked CDM Smith to perform a staffing analysis to identify the level and type of staffing necessary. This evaluation was performed by the CDM Smith operations and maintenance group and was supported by CDM Smith engineering staff.

Task 2.3, Evaluation of Emergency Operation Approach

During design development, CDM Smith recognized the need to define emergency operating conditions to properly size the plant water booster pumping and piping system and certain other infrastructure components. Consequently, CDM Smith worked with the City to define what an emergency situation would look like and what would operate and at what level during and

emergency situation. This information was in turn used to establish a second set of design criteria for the design. In addition to engineering staff, this evaluation also relied heavily on the CDM Smith operations and maintenance staff.

Task 2.4, Evaluation of Seed Source for the Digesters

Normally digester sludge from local treatment facilities is used as seed to establish the microbial culture necessary for starting up a new anaerobic digester system. However, the sludge to be treated in this case will be conditioned using thermal hydrolysis and will be different from sludge that is treated in a conventional anaerobic digester. Since the sludge is different, the microbial culture in the digester will be different. This task involves evaluation of options for obtaining seed and for establishing the appropriate microbial culture. A technical memorandum will be prepared to document this evaluation and submitted to the City electronically for review. A conference call will be held with the City to discuss the memorandum and then CDM Smith will prepare and electronically submit the final technical memorandum.

Task 2.5, Evaluation of Level of Training Required for THP Facilities

CDM Smith evaluated the level of training that would be required for the new THP facilities as well as the remote assistance provided by CAMBI. A technical memorandum will be prepared to document this evaluation and will be submitted to the City electronically for review. A conference call will be held with the City to discuss the memorandum and then CDM Smith will prepare and electronically submit the final technical memorandum.

Task 2.6, Assistance with New Laboratory Concept Development

New laboratory space is included as part of the Solids Processing Building design. The design intent was to provide empty rooms that would be equipped at a later date. However, to make sure that the rooms provided properly accommodate the City's needs, CDM Smith recommended that more detailed concepts be developed. This task included CDM Smith developing detailed concepts with the City and included the following subtasks:

- Field visits and interviews with laboratory staff
- Identification of testing and reporting requirements from facility's NPDES permit
- Checks of local code requirements for the laboratory space
- Development of preliminary equipment list for fully functional liquid and solids treatment laboratory
- Discussion and finalization of equipment list with the City
- Expansion of final equipment list to include design requirements for CDM Smith team, including equipment footprints; electrical, plumbing and ventilation requirements; and grouping of common equipment into rooms
- Calculation of costs for the final list of lab equipment, and inclusion of an allowance in the bid documents

Task 3, Design Modifications

Additional design work will be necessary to address the odor control design modifications recommended during the assistance with addressing odor control issues task and to add fire suppression sprinkling to the Biosolids Processing Building per the Fire Marshall. In addition, the structural design scope had to be expanded to address raising of the steam and digester gas piping to above grade pipe racks and other changes. These are described in more detail below.

Task 3.1, Odor Control Design Modifications

One of the recommendations of the odor evaluation report produced under Task 2 is to modify the design of the biosolids area odor control system and the solar dryers to allow the City to more easily retrofit each of these should additional odor control measures be necessary. The recommended odor control design modifications are in response to the Chestnut Bend neighborhood concerns over potential odors. CDM Smith's odor control specialist believes that current design for the biosolids area odor control is appropriate for the anticipated odor potential. In addition, not providing odor control for the solar dryer system is consistent with the configurations that have been employed by the major solar dryer manufacturers at their other installations and consistent with what we believe is necessary. CDM Smith recommends modifying the current designs such that the originally proposed biosolids odor control system can be more easily expanded and/or odor control can be more easily added to the proposed solar dryer if this is actually needed. The specific scope for this task is explained in the following paragraphs.

The currently proposed odor control system for the biosolids area is a two stage scrubber system utilizing sodium hypochlorite and caustic solutions. This task would include modifying the design to accommodate future retrofitting of the system to include a third scrubber compartment (stage) utilizing a sulfuric acid scrubber solution. This will require modifying the system layout and the surrounding layout to provide the space for the third compartment, a sulfuric acid storage tank, and sulfuric acid metering pumps. We anticipate that these modifications to the design will require modification of 8 drawings (3 civil, 1 structural, 2 process mechanical, 1 electrical, and 1 instrumentation and control).

The current solar dryer design does not include odor control. CDM Smith recently worked with the selected solar dryer supplier to establish an odor control system design that can be added should odor be a problem. CDM Smith does not believe that odor will be a problem, however making the system easy to retrofit should be relatively simple and inexpensive. This task includes working with the supplier to identify the changes to the structure necessary to allow easy retrofit and identifying space and power needs for the potential future retrofit to allow adjusting the civil and electrical drawings accordingly. We anticipate that these modifications to the design will require modification of 8 drawings (3 civil, 2 structural, 2 process mechanical, 1 electrical). In addition, this task includes assistance with negotiation of cost differences with the supplier and assistance with modifying the supplier's preselection agreement.

Although these modifications impact a lot of drawings, we believe these changes will be equivalent in effort to creation of two new drawings for the odor control system and two new drawings for the solar dryer system. The changes won't include the design of the potential expansions, but instead will consider the changes needed to allow easier retrofitting in the future,

if needed. For example, the concrete structure for the biosolids odor control system would be modified slightly to allow extending the containment area and knocking out one of the walls constructed during the current construction.

Task 3.2, Addition of Fire Sprinkling to Solids Processing Building

The Fire Marshall has decided to require fire suppression sprinkling for the Solids Processing Building. This change will require addition of four fire protection drawings, modification of one plumbing drawing, modification of seven architectural drawings, modification of three electrical drawings, modification of one process mechanical drawing, and modification of one general drawing. Also, two specification sections will have to be added and others will have to be modified. The potable water system hydraulic model will have to be checked to verify that no water main size changes will be necessary. We have assumed that no water main size changes will be necessary and therefore no changes to the civil drawings will be necessary.

Task 3.3, Additional Structural Analysis and Design

This task includes addition of drawings for a canopy over the thermal hydrolysis process (THP) and above grade pipe racks along several corridors in the biosolids processing area. The original design scope assumed that the thermal hydrolysis system would be located on a slab with no cover. However, after visiting several facilities the City staff felt it would be best to provide a canopy over the THP area. As a result, the design of an open sided covered structure with partial walls was designed. Two drawings were added and one drawing was modified for this design.

The original scope assumed that piping between buildings and other structures would be below grade. However, during design it was determined that placing certain piping on elevated pipe racks, especially digester gas piping and steam piping, would be advantageous as it would reduce the depth and cost of the gravity sewer systems and make access to piping easier. Digester gas and steam piping requires condensate blow off points that require gravity drainage to the sewer system. Placing these pipes underground would drive the gravity sewer deeper below grade and would also require addition of a pump station to convey drainage to the head of the plant. This change required addition of six drawings and modification of two drawings.

Task 4, Additional Permitting and SRF Assistance

The original scope included preparation of a single set of drawings for the SCADA work and the wastewater reclamation facility. At some point it was decided to split the collection and distribution system SCADA work out separately as that would allow starting that portion of the construction earlier. Although it will allow earlier construction of the SCADA improvements, the splitting of the drawings also resulted in creation of a separate state revolving fund (SRF) process. Therefore, preparation of separate SRF documentation for the SCADA work was necessary, including financial submittals, environmental submittals, fiscal sustainability plan, cost effective certification, green business model, etc. In addition to creation of a separate set of documents, coordination of a separate process is also necessary.

A similar situation occurred for the work at the wastewater reclamation facility. The SRF process for the WRF has been delayed due to delays in the NPDES permitting, which is a result of the resolution of the lawsuit dragging out. Discussions with the SRF staff led to development of a concept where the WRF bid set would be split into two separate bid documents to allow funding

and construction of non-NPDES permit dependent components earlier. As with the SCADA work, separate SRF documentation would have to be developed and a second SRF process would have to be managed. It has now been decided that splitting of the WRF project into two projects will not be necessary, however, a significant amount of effort was expended toward the splitting of documents and setting up and managing the second SRF process prior to the decision to truncate the splitting process.

A third item under this task includes working with TDEC to introduce them to the proposed thermal hydrolysis process (THP) and increase their comfort and understanding of the intricacies of the process. This is necessary because this is a relatively new technology with no operating systems in Tennessee. Therefore, TDEC has not really been exposed to the process. It was originally contemplated that we would work with TDEC during construction and startup to introduce them to the intricacies of the THP process. However, during the ongoing SRF process TDEC has required additional data and clarification on THP functionality and performance.

As a result, CDM Smith has been engaged to meet with TDEC to address their concerns. Two meetings have been set up and CDM Smith has been assembling operating and testing data from a Cambi system in Washington D.C. CDM Smith will bring in a subject matter expert on the THP process for these two meetings and will produce meeting minutes for each meeting. We have also assumed that one conference call will be held prior to each meeting to prepare for the meeting. Each conference call and meeting will be attended by the CDM Smith subject matter expert, the project manager, and the client service leader.

Task 5, Initial Assistance with TMDL Report Update for Phosphorus

The current TMDL study addresses nitrogen, but not phosphorus. The settlement agreement associated with the NPDES permit is expected to include a requirement for modification of the existing TMDL study to include consideration of phosphorus. This task includes initial assistance associated with the study. The scope of work for the TMDL work cannot be defined at this time, so we propose establishing an allowance of \$25,000 to provide assistance in defining the study and providing assistance with the initial steps.

Task 6, Development of Phasing Concepts

Prior to proceeding with the concept of splitting the previously designed project into two phases, CDM Smith was asked by the City to evaluate the practicality of splitting the project into two projects and identify the guidelines to be used in deciding where to split the work. For example, a portion of the overarching electrical infrastructure has to be constructed in Phase 1 to effectively serve the Phase 1 improvements. The division of the physical improvements had to be carefully determined to make sure the resulting Phase 1 design would operate as intended on its own and could be transitioned into Phase 2 without an unreasonable impact on overall cost. Once it was determined to be practical and the goals were established the CDM Smith team planned for and held two sessions and several sub sessions to establish two separate drawing and specification lists. CDM Smith also performed a high level evaluation of the previous opinion of probable construction cost estimates to provide the City with information on the split of capital costs between Phases 1 and 2.

3.0 Time of Completion/Schedule

The proposed schedule for each of the eight tasks is presented in the Table 1, below.

Table 1
Task Schedules

Task	Status and Completion Schedule
Task 1.1, Assistance with Public Response to Odor Control Issues	Completed
Tasks 1.2, Baseline Odor Sampling	Within 18 weeks of Notice to Proceed (NTP)
Task 2, Added Technical Evaluations	Mostly completed. Remaining two memorandums will be transmitted to the City by July 31, 2016.
Task 3, Added Design Components	The added structural design is complete. The odor control changes and the fire suppression changes will be completed within 60 days of notice to proceed.
Task 4.1, Addition of SCADA to SRF Process	The SCADA SRF pre-bidding work will be complete no later than July 31, 2016 and the bid tab will be submitted to the SRF within 60 days of loan approval.
Task 4.2, Additional SRF Process Effort Due to Splitting of WRF Design	Work will be complete by May 24, 2017.
Task 5, Initial Assistance with TMDL Report Updates for Phosphorus	Work schedule cannot be established at this time.
Task 6, Development of Method for Splitting of Drawings and Specifications	Completed

4.0 Compensation and Payment

The work in this amendment will be performed for a not to exceed budget of \$484,230. A breakdown of the cost for this amendment is provided in Table 2. The work will be performed on a billing rate basis in accordance with the rates established in the contract.

Table 2
Summary Spreadsheet
Franklin WRF Amendment 3

	Task No.	1	2	3	4	5	6	
			Added Technical Evaluations and Assistance	Design Modifications	Additional SRF and Regulatory Assistance	Initial Assistance with TMDL Report Update	Development of Method for Splitting Drawings Into Two Contracts	Total
LABOR	Rate	Odor Control Assistance						
Officer	\$215	0	0	0	56	0	0	56
Project Manager	\$170	54	27	24	208	24	22	359
Senior Technical Specialist	\$190	195	112	38	210	32	22	609
Technical Specialist	\$170	65	129	140	0	32	23	389
Senior Engineer/Scientist	\$150	37	39	180	136	32	23	447
Engineer/Scientist	\$120	57	123	180	6	32	0	398
Junior Engineer/Scientist	\$100	4	0	0	0	0	0	4
Senior Designer	\$115	0	0	420	0	0	0	420
Senior Construction Specialist	\$150	0	0	0	0	0	0	0
Construction Esimator	\$110	0	0	0	0	0	0	0
Designer/Drafter/Technician	\$95	0	0	420	0	0	0	420
Administration	\$75	14	19	22	46	6	0	107
TOTAL HOURS		426	449	1424	662	158	90	3209
TOTAL DOLLARS		\$71,120	\$69,835	\$173,550	\$111,870	\$24,690	\$15,280	\$466,345
OTHER DIRECT COSTS								
Car Mileage	\$0.60	\$280	\$0	\$0	\$600	\$0	\$0	\$880
Rental Car	\$75	\$300	\$0	\$0	\$300	\$0	\$0	\$600
Air Fare	\$700	\$1,500	\$0	\$0	\$1,400	\$0	\$0	\$2,900
Meals	\$45	\$225	\$0	\$0	\$180	\$0	\$0	\$405
Hotel	\$130	\$620	\$0	\$0	\$260	\$0	\$0	\$880
Document Reproduction		\$390	\$100	\$180	\$660	\$310	\$0	\$1,640
Shipping		\$610	\$0	\$30	\$70	\$0	\$0	\$710
Miscellaneous Equipment/Supplies		\$9,870	\$0	\$0	\$0	\$0	\$0	\$9,870
TOTAL ODCs Plus 0% Markup		\$13,795	\$100	\$210	\$3,470	\$310	\$0	\$17,885
OUTSIDE PROFESSIONALS								
Structural - Special Inspection		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Civil Infrastructure Associates		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Scheduling Subconsultant		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Geotechnical - Materials Testing		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal OPs		\$0	\$0	\$0	\$0	\$0	\$0	\$0
OPs with 0% Markup	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TOTALS		\$84,915	\$69,935	\$173,760	\$115,340	\$25,000	\$15,280	\$484,230